

# System 10 LCR

# System 10 SR Dipole Surround



# Instruction Manual



**Atlantic Technology**  
INNOVATIVE HOME THEATER

Thank you for purchasing Atlantic Technology products. Our speaker systems have been designed to deliver exceptional sound and value. We hope you like what you hear from them, and are happy with your decision to buy them.

Please take a few moments to read these instructions. They're intended not only to tell you how to mount the speakers, but how to get the best performance from them.

## Important Considerations Before Installation

### Recommended Wire Sizes

The longer the wire run, the heavier the wire should be. Use the following recommendations as a guide for your installation. And if you're in doubt, remember that it never hurts to get the next heavier grade of wire. Also note that lower gauge numbers equal heavier wire sizes.

Wire Run	Wire Gauge
<15 ft.	18 ga.
15 to 30 ft.	16 ga.
30 to 50 ft.	14 ga.
50 to 80 ft.	12 ga.
80 to 120 ft.	10 ga.

### Location, Location, Location

A major determinant of any speaker's sound quality is the room and its location in it. With in-wall speakers there are fewer placement options than with box speakers, so giving some thought to location can really pay off. Additionally, the wall your speaker is mounted in will affect its sound. Our InWall Theater Systems have been computer designed to minimize the detrimental effects wall mounting can have on sound, so they sound better than most, if not all in-wall speakers.

### Locations of Choice

Assuming that you'll be using System 10 speakers for more than simple background listening, here are some placement recommendations:

#### Stereo Systems

For stereo music reproduction the speakers are best located at approximately ear level when seated, both on the same wall, facing the prime listening location. A separation of approximately six to eight feet between the left and right speakers is usually good. Ideally, the distance between the two speakers will be the same as the distance from the speakers to the listening position. The speakers and the listening position will then form an equilateral triangle. There is a benefit to mounting the speakers approximately the same distance from the side walls, so they both create the same reflective patterns.

Hard surfaces create lots of sound reflections in the room while soft surfaces tend to absorb sound. Note the speaker's location in terms of proximity to glass and other highly sound reflective or absorptive surfaces. A simple pair of curtains can make a major difference in sound quality and intelligibility! The more similar the speaker's surroundings, the more consistent the sound will be. So placing one speaker directly adjacent to a glass wall, with the other speaker by an open archway, will make for two dramatically different sounding speakers.

Note that as bass frequencies reflect within the room, some locations may be bass heavy while other areas may be bass shy. With an external subwoofer, changing its placement within the room may reduce these effects. But when in-wall speakers are utilized full range, the only real option is to change the listening position, if you end up in a difficult bass area.

#### Home Theater Systems

Today's home theater systems require you to place six or more speakers in your room. Placement for these speakers is potentially more critical than with pure music reproduction alone. *That's because the goal of setting up a good home theater isn't to put you in the movie theater; it's to put you in the movie!* That's right, we want you to believe you're in the jungle, the restaurant, the office, or wherever the video scene is taking place. If you keep this goal in mind throughout the system development process you'll end up with a better home theater, for sure.

## Home Theater Locations of Choice

### Left/Center/Right Locations

The front three speakers should be at ear height when seated, just as with as stereo speakers. Unfortunately, the presence of the television tends to make this difficult, if not impossible to achieve. (Unless you're using a front projector and a perforated screen with the center channel speaker directly behind it). The closer you can get to this ideal the better, however. Try to keep the left and right speakers within 3 feet to either side of the TV screen. If possible, place the left and right speakers no more than 2 feet above or below the height of the center channel speaker. The center speaker itself should be centered on, and directly above or below the TV screen.

**IMPORTANT: The System 10 LCR speaker was designed to be used in a vertical (portrait) orientation, if at all possible. The dispersion characteristics of the speaker are optimized in this position.**

### The All Important Surround Speakers

In order to achieve optimum performance we strongly recommend Dipole surround speakers like the System 10 SR. The following placement recommendations apply to all Dipole surround speakers (whether the System 10 SR or another model) Please try to follow them.

Dipole surrounds produce a wide, diffuse, relatively non-localizable sound field that projects to the sides of the speaker. Directly in front of the speaker there's a sound "null" or dead zone. When properly placed in the room, with the apex null aimed at the listeners, this creates the illusion that the sound is coming from a large area to both sides of the speaker! The result is that you're immersed in the surround field and become one with the action taking place up on the screen.

### Surround Speaker Locations

*The absolute best place for a Dipole surround is directly to the sides of the prime listening position (+/- 15 degrees). They should be located no less than 18 inches above ear height when seated and at least 24 inches below ceiling level. If the surround speakers must be located closer than 24 inches to the ceiling they should be turned upside down to keep the tweeters as far as possible from the ceiling. Please see the important note below.*

System 10 SR surrounds are designed to mount horizontally, on the side walls. If they must be placed on the back wall or the ceiling, please follow these guidelines. On the rear wall, install the speakers horizontally at least 24 inches away from the corner, and between 18 inches above ear level when seated and 24 inches down from the ceiling. If installed in the ceiling, position them with the drivers facing the front and back of the room, with the Left speaker on the left side of the room and the Right on the right side. As much as possible keep the null centered on the prime listening position.

**IMPORTANT: Please note that there are dedicated left and right Dipole surround speakers and they are labeled as such. This is done to ensure that the drivers facing the front of the room are in phase with the system's front speakers. Left and right refer to the left and right wall when you are seated facing the screen. If the speakers must be mounted upside down on the side walls, as outlined above, be sure to swap them from side to side in order to maintain proper phasing with the fronts.**

*In any case, please note that for the greater part of any movie you should not be directly aware of the surround speaker's presence. They're there to create those environmental sounds of the location up on the screen. So in a rain filled scene you should be thinking, "Is it raining outside my house?", not "Hey, I hear the rain in the surround speakers!"*

### Non-Dipole surrounds

If you decide to use a Monopole for the surrounds (like the System 10 LCR) keep the following in mind. With non-Dipole surrounds, the more directly they are aligned with your ears, the more localizable their sound. And since the vast majority of surround information consists of sonic cues that aren't supposed to be localized, this is particularly undesirable. Generally then, non-Dipole surrounds should be placed well above ear level on the side or rear walls. As opposed to Dipoles, Monopoles and Bipoles work best when placed on the side or rear wall, well above and not aimed directly at the listening position.

## Mounting Issues System 10 LCR

**We always recommend a professional be involved in the installation of InWall Theater System speakers, if at all possible.**

The System 10 LCR speaker can be easily mounted in most any standard wall material, from 1/2 to 1 1/2 inches (12 to 38 mm) thick. Its rotating wall clamps firmly fix it to the wall surface after the proper cutout has been made. Here are some important precautions to take before mounting:

Keep the sides of the actual mounting hole at least 1 inch (25 mm) away from beams or studs. The clamps require 3/4 of an inch (19 mm) to rotate, and a stud or other obstruction that's too close will stop them from properly doing their job.

Wall cavity size will effect the bass and midrange performance of any in-wall speaker. The System 10 LCR is designed to play optimally in a 0.5 to 1.25 cubic foot space (864 to 2160 cu. inches, measured before wall insulation is inserted). Cubic dimensions can be determined by multiplying the length x width x height of the cavity. A larger cavity won't hurt, but a smaller one will definitely impact the bass and midrange response of the system.

Some of the sound from the speaker will transmit to the space on the other side of the wall cavity. If this is a major concern, you can build a box within the wall that provides the required cubic volume. The larger the volume, the better the bass response will be, up to 1.25 cubic feet. Beyond this size there will be no effective performance gain. Also please note that there is very little room behind the drivers in a standard "2 x 4" wall cavity (1/4 inch, 6 mm), so the back of any enclosure box must be made from relatively thin materials, yet it should not physically contact the back wall. Typically then, the back wall material will be roughly 1/8 to 1/4 inch (3 to 6 mm) thick.

Insulate the speaker cavity with fiberglass wool, observing all the relevant precautions and instructions from the insulation manufacturer. If you have built a back box, you can use common fiberfill (available at craft stores as pillow stuffing), or fiberglass in the enclosure. Be sure to push the insulation back from the drivers to ensure that it doesn't get into the moving cone area.

### Ceiling Mounting

It is especially important when mounting the speaker in a ceiling that you cover the back of the system with a fiberglass window screening (available at any home center or hardware store) to keep insulation and other foreign matter out of the assembly. You also should install safety wires from the rear of the assembly to a secure mounting place, like adjacent beams or the floor above, for added security. Should you be installing System 10 speakers in a suspended ceiling, it is imperative to install safety wires from the speaker to the support structure above, to ensure security under all conditions.

## Installation of System 10 LCR in New Construction

Atlantic Technology offers an optional Rough-in Frame Kit to ease installation in new construction. Instructions for its use are included with this kit. The kit's model nomenclature is IN-NC-10

## Installation of System 10 LCR in Existing Construction

### Remove and Installing the Grille

Remove the grille from the speaker using an awl or the point of a drywall screw in a grille opening near one of the grille corners. Slowly pry the grille out, being careful not to damage the speaker's frame or its finish. Install the grille by pressing it carefully into the appropriate opening in the frame assembly. Since it's designed to fit snugly, please take your time and use care when installing the grille.

### Cutting the Opening

After determining the best location for the speaker as outlined above, use the enclosed template to cut the proper size hole (15 13/16" x 7", 402 x 178 mm). **Exercise extreme care before making any wall cuts to ensure that you will not cut through any wires, pipes, or other items that may be in the wall. You may sometimes, but not always, be able to determine the approximate location of wires and pipes by looking at the locations of nearby outlets and plumbing. But their location or absence is never an assurance that there is not something within the wall cavity.**

## Installing the Mounting Frame

The clamping mechanism allows the wall material to range from 1/2 to 1 1/2 inches (12 to 38 mm) in thickness. There must be a minimum depth behind the wall face of 3 5/8" (92 mm). As noted above, be sure to keep the edges of the cutout at least 1 inch (25 mm) away from any stud or obstruction, as the rotating clamps will not operate properly if you don't. The speaker baffle (the part with the drivers mounted in it) is designed to mount into the white frame after the frame is mounted into the wall.

Insert the frame into the cutout and using a level or square carefully align it so it is (or it appears) level. Tighten the mounting screws, which will cause the clamps to rotate and position themselves properly behind the wall, until the frame is just snug in the wall. You want the bezel to conform to the wall board, and the frame not to rattle from the speaker's vibration but **be very careful not to overtighten the screws.**

## Painting the Speaker Assembly

The white plastic frame of the speaker baffle assembly and the metal grille may be left as is, or painted to match your décor. You can paint the frame before or after it is installed in the wall. Spray painting (using slightly thinned paint) is the best method to use for painting the grille. After painting the grille, use air pressure to "blow out" any grille holes that are covered over with paint.

## Speaker Connection and Assembly

Strip about 1" of insulation from the connecting wires. Connect them to the appropriate push terminal, being careful to observe polarity (positive to the red terminal, negative to the black terminal). Install the speaker baffle assembly into the previously mounted frame assembly, being careful to ensure that the speaker wire isn't pressed up against the back of a speaker cone, and screw it into place using the supplied screws. Again, be careful not to overtighten the screws. Insert the grille into the frame as outlined above, being careful not to damage the frame or the grille's finish.

## High Frequency Level Control

There is a switch located behind the grille on the front of the speaker. This switch is accessible by removing the grille as outlined above. You can change the switch setting with your fingernail or a small pointed object, such as a ball point pen. The switch has three settings that adjust the high frequency output from the speaker. We strongly recommend that you try all three settings, using both music and movies (if the System 10 LCR is part of a home theater system). Please note that recordings vary in their sound balance so try several different discs. Try to achieve the best balance of natural overall sound with good detail and clarity. The switch settings are "Normal" in the lower position, "-2dB" in the middle position, and "+2dB" in the upper position. To aim the tweeter, press gently on the plastic ring that surrounds the dome, but not the dome itself. Aim the tweeter at the prime listening position when the LCR is used as a front speaker, and away from the listening position if it's used as a surround.

## Installation of System 10 SR Dipole Surround

**IMPORTANT:** Note that the Installation Bracket is required for all installations, new construction or retrofit. Please see the installation instructions for the IN-INST-20SR for information pertaining to Installation Bracket mounting, and its use as a rough-in assembly in new construction. The following instructions primarily apply to the final installation of the speaker system into the already mounted Installation Bracket.

The following instructions cover only the System 10 SR. When the Installation Bracket has been used as a rough-in device in new construction, proceed directly to Step 4.

## Cutting the Opening - Installing the Installation Bracket

After determining the best location for the speaker as outlined above, use the template (enclosed in the Installation Bracket kit) to cut the proper size hole. (System 10 SR - 11" x 14 3/8", "landscape" orientation). *It's very important to cut the hole level as there is no "play" between the speaker and the Installation Bracket.*

**IMPORTANT:** Exercise extreme care before making any wall cuts to ensure that you will not cut through any wires, pipes, or other items that may be in the wall. You may sometimes, but not always, be able to determine the approximate location of wires and pipes by looking at the locations of nearby outlets and plumbing. But their presence or absence is never an assurance that there is not something within the wall cavity.

There must be a minimum depth behind the wall face of 3 5/8 (92 mm). Be sure to keep the edges of the cutout at least 1 inch (25 mm) away from any stud or obstruction. The speaker assembly itself (the part with the drivers mounted in it, the trimming bezel, etc.) is designed to mount to the Installation Bracket after it has been installed within the wall.

Step 1. Tilt one corner of the Installation Bracket into the opening and continue to slide it fully into the wall cavity until it fits completely into the cutout. Be sure to position the side extensions so they press against the inside of the wall.

Step 2. Carefully insert the tabs into the Installation Bracket as shown in Fig. 1. They are a tight fit and are best installed by “clamping” them with your hand as shown. Alternately, there are predrilled holes in the side flanges of the Installation Bracket that may be used to hold the assembly to the wall board with #6 self-threading screws, instead of using the tabs. These screws will be hidden by the speaker’s bezel when it is mounted.

Step 3. After the Installation Bracket is fixed in place note that there are holes near the center of the long sides that can be used to secure feed wiring using the included nylon wire ties.



Fig 1 Installing the Mounting Bracket

Step 4. Strip about 1/2" of insulation from the connecting wires. Insert them into the appropriate push terminal on the rear of the speaker assembly, being careful to observe polarity (positive to the red terminal, negative to the black terminal). Typically, with standard “zip” cord wiring the marked wire is used for the positive lead. Markings typically consist of a thread within one conductor, printing on the wire’s insulation, a ridge or ridges on the insulation, or a flat side to the insulation.

Step 5. Carefully position the speaker assembly into the wall cutout and Installation Bracket. Check that it’s level and then attach the speaker to the Installation Bracket with the included 3 inch #6 self-tapping screws. (If the assembly is not level, you can oversize the wall opening very slightly to allow straightening the bracket and speaker.)

Step 6. Tighten the mounting screws, which in turn will cause the bezel and the Installation Bracket to



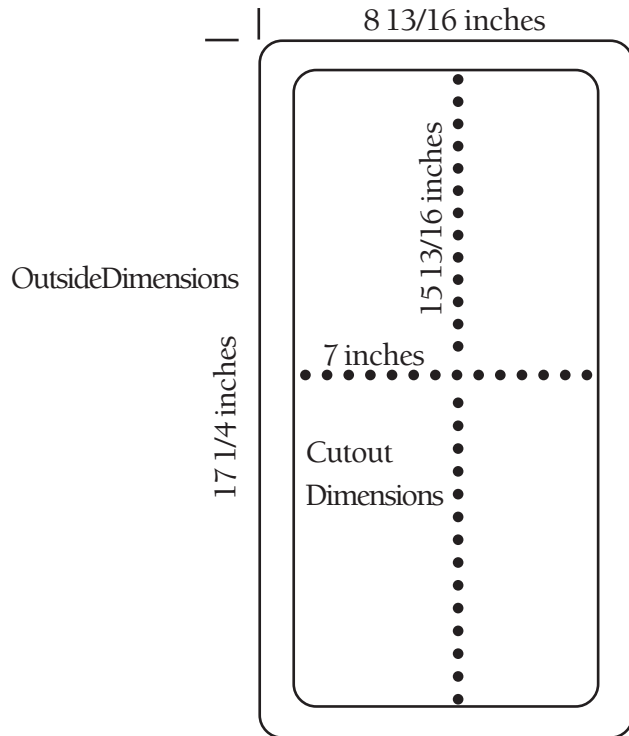
Fig. 2 Installing the clamping tabs

clamp the wall board between them. *Be very careful not to overtighten the screws as this can make the grille difficult or impossible to install. The outer trim bezel has been specially designed to flex and conform to the wallboard. This makes for a good seal and eliminates rattles but it also means that the speaker mounting screws should be snug, but not overly tight.*

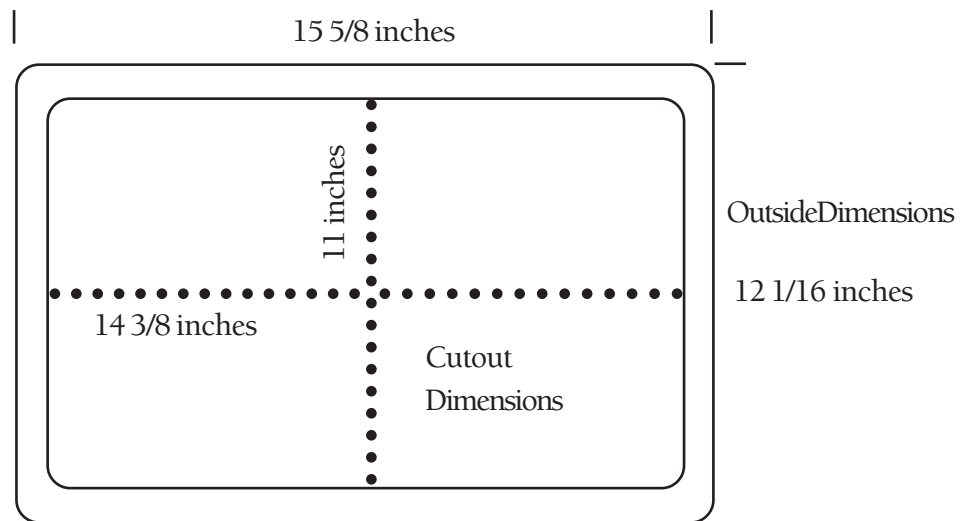
*Should you have any questions or problems please feel free to contact us at 781-762-6300 or through our web site, Customer Service@atlanticttechnology.com.*

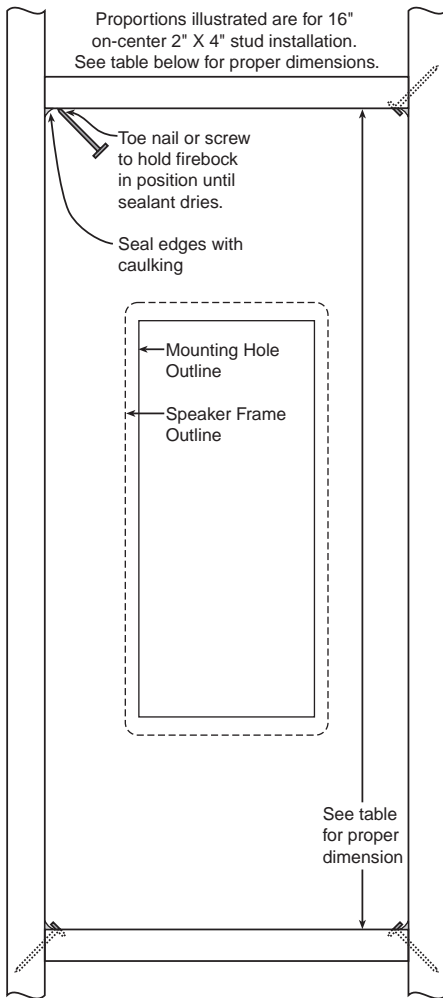
# Speaker and Cutout Dimensions

### System 10 LCR



### System 10 SR Surround





## System 10 LCR InWall Enclosure Recommendations

Please use this information to construct an in-wall enclosure if you so desire. Doing so will generally improve the performance and increase the power handling of the system. We have not included information for the System 10 SR since one of its woofers is self-enclosed and the other will not generate anywhere near the bass energy the LCR system will.

Be sure to line the cavity with weatherproof insulation, being careful to avoid letting the insulation touch the backs of the woofer cones. It's also important to seal the joints of the enclosure with a high quality non-shrinking caulk.

Be careful to keep the wires from touching the chassis of the drivers or baffle in such a manner that the wire might vibrate and buzz. You may use nylon wire ties to keep the wires properly positioned. Such ties are available that are designed to screw directly to studs making them ideal for this purpose.

As always, take care to wire the speakers properly, with the positive lead (normally marked with a red terminal or a "+" sign) from the amplifier connected to the positive terminal on the speakers and the negative (marked with a black terminal or a "-" sign) connected to its respective terminals.

2 x 4 Construction	1ft <sup>3</sup>	1.25ft <sup>3</sup>
16" O.C.Studs	34"	42.5"
24" O.C. Studs	22"	27.5"

2 x 6 Construction	1ft <sup>3</sup>	1.25ft <sup>3</sup>
16" O.C.Studs	21.7"	27"
24" O.C. Studs	16"*	17.5"

\* Minimum cut out height is 15.8".  
Placing the fire block at 16" yields an internal volume of 1.15ft<sup>3</sup>.

### System 10 LCR

Dimensions	17 1/4"H x 8 7/16"W x 3 5/8"D
Cut-out Dimensions	15 13/16"H x 7"W
Optimum wall volume	0.5 - 1.25 cu. ft.
Orientation	Vertical (Portrait)
Drivers/Design	2 - 6.5" IMG woofers 1 - 1" Silk dome tweeter D'Appolito array
Frequency Response	46 - 20kHz +/- 3dB
Sensitivity	89dB
Impedance	6 Ohms
Crossover Frequency	3400Hz, 4th order Linkwitz-Riley
Companion Components	Subwoofer(s): 4.5 PBM, 172 PBM, 272 PBM Surround(s): System 10 SR, 4.5 SR, 174 SR, 274T SR, System 20 SR
Mounting Brackets for Surround Speakers	174 SR = IN-RF BRK (no trim kit) 274 T = 274 IN-RF (w/trim kit)
New Construction Kit	IN-NC-10

### System 10 SR

Dimensions	12 1/16"H x 15 5/8" x 3 5/8"D
Cut-out Dimensions	11"H x 14 3/8"W
Optimum wall volume	0.5 cu. ft. or greater
Orientation	Horizontal (Landscape)
Drivers/Design	2 - 4.5" IMG woofers 2 - 3/4" soft dome tweeter Frequency Enhanced Dipole
Frequency Response	100 - 20kHz +/- 3dB
Sensitivity	88dB
Impedance	6 Ohms
Crossover Frequency	5000Hz
Companion Components	Satellites: System 10 LCR, 171 LR, 271 LR
Required Mounting Bracket	IN-INST-20SR
New Construction Kit	Same as above